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Date:	**Client Number:**	**No. Pages** (including this one):	
October 18, 2010	**028058-000110US**		
To:		**At Fax Number:**	**(571) 270-6268**
Examiner Golam Mowla		Confirmation Phone Number:	
U.S. Patent and Trademark Office			

From:

David W. Boyd

Message:

Please see attached interview request.

Faxed: Return To:Connie Larson

If you have problems with reception please call Fax Services at extension 1552

Attorney Docket No. 028058-000110US

Applicant Initiated Interview Request Form

Application No.: 10/823,353 First Named Applicant: Phillip C. Watts
Examiner: Golam Mowla Art Unit: 4721 Status of Application: pending

Tentative Participants:
(1) David W. Boyd (2)_____

(3)_____ (4)_____

Proposed Date of Interview: October 20, 2010 **Proposed Time:** 2:30 PM (Eastern)

Type of Interview Requested:
(1) [X] Telephonic (2) [ ] Personal (3) [ ] Video Conference

Exhibit To Be Shown or Demonstrated: [ ] YES [X] NO
If yes, provide brief description: _____

Issues To Be Discussed

Issues (Rej.,Obj.,etc.)	Claims Fig.#s	Prior Art	Discussed	Agreed	Not Agreed
(1) § 112	27, 28, 32-38		[ ]	[ ]	[ ]
(2) § 102	8	DeBucs	[ ]	[ ]	[ ]
(3)			[ ]	[ ]	[ ]
(4)			[ ]	[ ]	[ ]

[ ] Continuation Sheet Attached

Brief Description of Arguments to be Presented:

§ 112 Rejection: Counsel would like to point out where support is found in the specification for all of the claims rejected on this ground.

§ 103 Rejection: Counsel would like to discuss the interpretation of the claim terms.

Please see attached draft remarks submitted for discussion only.

An interview was conducted on the above-identified application on _____:

NOTE: This form should be completed by applicant and submitted to the examiner in advance of the interview (see MPEP § 713.01).
This application will not be delayed from issue because applicant's failure to submit a written record of this interview. Therefore, applicant is advised to file a statement of the substance of this interview (37 CFR 1.133(b)) as soon as possible.

/David W. Boyd/ _____
Applicant/Applicant's Representative Signature) (Examiner/SPE Signature)

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I hereby certify that this correspondence is being filed via EFS-Web with the United States Patent and Trademark Office on _____.

TOWNSEND and TOWNSEND and CREW LLP

By:_____

PATENT
Attorney Docket No.: 028058-000110US

DRAFT – FOR DISCUSSION ONLY

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Confirmation No. 4721
Phillip C. Watts	Examiner: Mowla, Golam
Application No.: 10/823,353	Technology Center/Art Unit: 1795
Filed: April 13, 2004	AMENDMENT
For: SAME PLANE MULTIPLE THERMOELECTRIC MOUNTING SYSTEM	
Customer No.: 20350	

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

In response to the Office Action mailed August 4, 2010, please enter the following amendments and remarks:

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks/Arguments begin on page 9 of this paper.

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1- 7. (Canceled)

8. (Previously presented) A thermoelectric generator for generating electricity from a temperature differential between a first fluid and a second fluid, the thermoelectric generator comprising:

a plurality of thermoelectric modules, wherein:

each of the thermoelectric modules comprises a first side and a second side; and

each of the thermoelectric modules generates electricity when there is a difference in temperature between the first side and the second side;

a first thermal module, wherein:

the first thermal module comprises a first block including a first passage through which first passage the first fluid flows through the block; and

the first thermal module is configured to exchange heat with the first sides of at least two of the plurality of thermoelectric modules; and

a plurality of second thermal modules, wherein:

each of the plurality of second thermal modules comprises a respective second block including a respective second passage through which second passage the second fluid flows through the respective second block; and

a side of each of the second thermal modules is configured to exchange heat with exactly one of the thermoelectric modules through the second side of the respective thermoelectric module; and

each of the second thermal modules accommodates all axis mechanical variance in its respective thermoelectric module.

9. (Previously presented) The thermoelectric generator for generating electricity from the temperature differential between the first fluid and the second fluid of claim 8, wherein the thermoelectric generator further comprises:

a compression mechanism, wherein the compression mechanism is operably coupled with two of the plurality of second thermal modules such that the first thermal module and at least one of the plurality of thermoelectric modules is compressed between two of the plurality of second thermal modules.

10. (Previously presented) The thermoelectric generator for generating electricity from the temperature differential between the first fluid and the second fluid of claim 9, wherein:

the compression mechanism comprises a rod and a spring.

11. (Previously presented) The thermoelectric generator for generating electricity from the temperature differential between the first fluid and the second fluid of claim 9, wherein:

the compression mechanism is configured to compress with an actively variable force.

12. (Previously presented) The thermoelectric generator for generating electricity from the temperature differential between the first fluid and the second fluid of claim 9, wherein:

the compression mechanism is configured to compensate for thermal expansion and thermal contraction of at least one of the plurality of second thermal modules.

13. (Previously presented) The thermoelectric generator for generating electricity from the temperature differential between the first fluid and the second fluid of claim 9, wherein:

the compression mechanism is configured to compensate for stack tolerance build-up of the plurality of second thermal modules.

14. (Previously presented) The thermoelectric generator for generating electricity from the temperature differential between the first fluid and the second fluid of claim 8, wherein;

at least one of the plurality of second thermal modules is compliantly coupled with at least one other of the plurality of second thermal modules.

15. (Previously presented) The thermoelectric generator for generating electricity from the temperature differential between the first fluid and the second fluid of claim 14, wherein at least one of the plurality of second thermal modules being compliantly coupled with at least one other of the plurality of second thermal modules comprises:

at least one of the plurality of second thermal modules compliantly coupled with at least one other of the second thermal modules, allowing all axis expansion, contraction and natural mechanical variance in elements of a stack comprising at least one of the plurality of thermoelectric modules.

16. (Previously presented) The thermoelectric generator for generating electricity from the temperature differential between the first fluid and the second fluid of claim 14, wherein at least one of the plurality of second thermal modules being compliantly coupled with at least one other of the plurality of second thermal modules comprises:

at least one of the plurality of second thermal modules being coupled via an o-ring slip joint with at least one other of the plurality of second thermal modules.

17. (Withdrawn) A thermoelectric generator for generating electricity from a temperature differential between a plurality of thermal modules, the thermoelectric generator comprising:

a first thermal module;

a second thermal module;

a first thermoelectric module disposed between the first thermal module and the second thermal module;

a third thermal module; and

a second thermoelectric module disposed between the second thermal module and the third thermal module, wherein the first thermal module is flexible coupled with the third thermal module.

18. (Withdrawn) The thermoelectric generator for generating electricity from the temperature differential between the plurality of thermal modules of claim 17, wherein the first thermal module comprises:

a first sub-module flexibly coupled with a second sub-module.

19. (Withdrawn) The thermoelectric generator for generating electricity from the temperature differential between the plurality of thermal modules of claim 17, wherein the second thermal module comprises:

a first sub-module flexibly coupled with a second sub-module.

20. (Withdrawn) The thermoelectric generator for generating electricity from the temperature differential between the plurality of thermal modules of claim 17, wherein the first thermal module being flexible coupled with the third thermal module comprises:

a compression mechanism operably coupled with the first thermal module and the third thermal module.

21. (Withdrawn) The thermoelectric generator for generating electricity from the temperature differential between the plurality of thermal modules of claim 20, wherein:

the compression mechanism is configured to compensate for thermal expansion and thermal contraction of at least the second thermal module.

22. (Withdrawn) The thermoelectric generator for generating electricity from the temperature differential between the plurality of thermal modules of claim 17, wherein

the first thermal module and the third thermal module are flexibly and fluidically coupled.

23. (Canceled)

24. (Previously presented) The thermoelectric generator for generating electricity from a temperature differential between a first fluid and a second fluid as recited in claim 8, wherein the first fluid is at a higher temperature than the second fluid.

25. (Previously presented) The thermoelectric generator for generating electricity from a temperature differential between a first fluid and a second fluid as recited in claim 8, wherein the first fluid and the second fluid are received from external storage reservoirs.

26. (Previously presented) The thermoelectric generator for generating electricity from a temperature differential between a first fluid and a second fluid as recited in claim 8, wherein the first fluid and the second fluid circulate to and from external storage reservoirs.

27. (Previously presented) The thermoelectric generator for generating electricity from a temperature differential between a first fluid and a second fluid as recited in claim 8, further comprising a common inlet through which the second fluid is received for distribution to all of the second thermal modules.

28. (Previously presented) The thermoelectric generator for generating electricity from a temperature differential between a first fluid and a second fluid as recited in claim 8, wherein both fluids are liquids.

29. (Previously presented) The thermoelectric generator for generating electricity from a temperature differential between a first fluid and a second fluid as recited in claim 28, wherein both liquids comprise water.

30. (Previously presented) The thermoelectric generator for generating electricity from a temperature differential between a first fluid and a second fluid as recited in claim 8, wherein the first thermal module is rectangular.

31. (Previously presented) The thermoelectric generator for generating electricity from a temperature differential between a first fluid and a second fluid as recited in claim 8, wherein each of the second thermal modules is rectangular.

32. (Previously presented) The thermoelectric generator for generating electricity from a temperature differential between a first fluid and a second fluid as recited in claim 8, wherein at least two of the plurality of second thermal modules reside on one side of the first thermal module, both of their respective thermoelectric modules being in contact with one planar face of the first thermal module.

33. (Previously presented) The thermoelectric generator for generating electricity from a temperature differential between a first fluid and a second fluid as recited in claim 32, wherein the two second thermal modules that are on one side of the first thermal module are flexibly coupled to each other.

34. (Previously presented) The thermoelectric generator for generating electricity from a temperature differential between a first fluid and a second fluid as recited in claim 32, wherein the two second thermal modules that are on one side of the first thermal module are flexibly coupled to each other such that the second fluid flows through the respective second passages of both of the second thermal modules that are on one side of the first thermal module.

35. (Previously presented) The thermoelectric generator for generating electricity from a temperature differential between a first fluid and a second fluid as recited in claim 34, further comprising a compliant member that seals between the two respective second passages.

36. (Previously presented) The thermoelectric generator for generating electricity from a temperature differential between a first fluid and a second fluid as recited in claim 32, further comprising a compliant member between the two second thermal modules that

are on one side of the first thermal module, and a mechanism that connects the two second thermal modules and applies pressure to the compliant member.

37. (Previously presented) The thermoelectric generator for generating electricity from a temperature differential between a first fluid and a second fluid as recited in claim 36, wherein the mechanism is a dogleg feature.

38. (Previously presented) The thermoelectric generator for generating electricity from a temperature differential between a first fluid and a second fluid as recited in claim 32, wherein at least two of the plurality of second thermal modules reside on a second side of the first thermal module, both of their respective thermoelectric modules being in contact with a second planar face of the first thermal module.

REMARKS/ARGUMENTS

Prior to entry of this Amendment, claims 8-22 and 24-31 were present for examination in this application, claims 17-22 having been previously withdrawn and claim 23 having been previously canceled. No claims are amended, canceled, added by this paper. Therefore, claims 8-16 and 24-38 are now present for examination, and claim 8 is the independent claim. No new matter is added by these amendments.

Applicant respectfully requests reconsideration of the application as amended in light of the following remarks.

Rejections Under 35 U.S.C. § 112

The Office Action has rejected claims 27, 28, and 32-38 under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement. (The Office Action also indicates that claim 29 is rejected on this ground, but provides no discussion of the rejection. Applicant believes that claim 29 was not intended to be included in the rejection.)

Applicant respectfully traverses.

In determining whether a claim meets the written description requirement, "the fundamental factual inquiry is whether the specification conveys with reasonable clarity to those skilled in the art that, as of the filing date sought, applicant was in possession of the invention as now claimed. … Possession may be shown in a variety of ways including description of an actual reduction to practice, or by showing that the invention was 'ready for patenting' such as by the disclosure of drawings … that show that the invention was complete, or by describing distinguishing identifying characteristics sufficient to show that the applicant was in possession of the claimed invention." (MPEP 2163.02).

For every one of the claims rejected on this ground, the original disclosure makes clear that the inventor was in possession of the invention as now claimed.

Claim 27

The Office Action alleges that the limitation *a common inlet through which the second fluid is received for distribution to all of the second thermal modules* is not supported by

the disclosure as filed, arguing that Applicant's figures show two inlets 6 and 9. Applicant respectfully notes that claim 27 does not specify a "single" inlet or "only one" inlet, but specifies *a common inlet*. Input port 9 (as numbered in original Figure 1) is connected by passages to all of the second thermal modules, and is thus *a common inlet through which the second fluid is received for distribution to all of the second thermal modules*. Input port 6 could also be *a common inlet*, although it may also pass fluid to another module connected above the module depicted in the figures. (Specification paragraph [0010]).

Claim 28

The Office Action alleges that the limitation *both fluids are liquids* is not supported by the disclosure as filed. Applicants respectfully disagree, as the specification indicates that both fluids are water, and water is a liquid. (Specification paragraph [0010]). In support of the rejection, the Office Action argues that "the original specification fails to provide support that at the time of the invention applicant has possession to every possible kind of heat transfer liquid such as liquid metals, ammonia or methyl alcohol to name a few." (Office Action p. 3). Applicant notes that the original claims as filed recited "fluids or gases" as possible working fluids. (Original claims 2, 4, 5). Present claim 28 is therefore actually narrower than the original claims in this regard, as liquids are a subset of fluids and gases. "Each case must be decided on its own facts in terms of what is reasonably communicated to those skilled in the art." (MPEP 2163.05(II)). In this case, the *liquid* is completely encompassed by the previously recited "fluids", and Applicant's original disclosure discloses water, which is a liquid. Applicant respectfully submits that on these facts, claim 28 is adequately supported by the disclosure as filed.

Claims 32 and 38

The Office Action alleges that the limitation *at least two of the plurality of second thermal modules reside on one side of the first thermal module* recited in claim 32 is not supported by the disclosure as filed, arguing that the term *at least two* is open-ended, and that Applicant's figures show at most two second thermal modules on one side of a first thermal module. Claim 38 is rejected on similar grounds. Apparently, the Office Action is suggesting that Applicant is now attempting to claim more than he envisioned at the time of filing.

The specification as originally filed indicates that one advantage of the claimed system is that it is expandable, using such open-ended terms a "multiple parallel in plane elements" (Abstract) and "any number of in plane thermoelectric modules" (original claim 2) to indicate that Applicant envisioned much larger arrays of components. Many other examples of such language can be found throughout the specification and claims as filed.

Applicant respectfully submits that *at least two of the plurality of second thermal modules resid[ing] on one side of the first thermal module* is adequately supported in the disclosure as filed.

Claim 33

The Office Action alleges that the limitation *the two second thermal modules that are on one side of the first thermal module are flexibly coupled to each other* is not supported in the disclosure as filed. On the contrary, Figure 2 (as originally filed and numbered) shows two modules 1 separated by an O-ring 2, which is a flexible element. Paragraph [0011] states that "[t]his embodiment allows all axis expansion, contraction and natural mechanical variance in stack elements in multi-up configurations." The system is clearly designed with a flexible coupling between the modules.

Claim 34

The Office Action alleges that the limitation *the two second thermal modules that are on one side of the first thermal module are flexibly coupled to each other such that the second fluid flows through the respective second passages of both of the second thermal modules that are on one side of the first thermal module* is not supported by the disclosure as filed. As is explained above with respect to claim 33, the disclosure as filed does describe the thermal modules being flexibly coupled. Figure 2 also shows that the coupling is such that fluid can flow through the passages in the two modules.

Claim 35

The Office Action alleges that the limitation *a compliant member that seals between the two respective second passages* is not supported by the disclosure as filed. As is explained above, Figure 2 shows and paragraph [0011] describes an O-ring 2 that seals between the passages in two blocks. An O-ring is well known to be compliant.

Claims 36 and 37

The Office Action alleges that the limitations of *a compliant member between the two second thermal modules that are on one side of the first thermal module, and a mechanism that connects the two second thermal modules and applies pressure to the compliant member* recited in claim 36 and the limitation that *the mechanism is a dogleg feature* recited in claim 37 are not supported in the disclosure as filed. As is explained above, the specification and drawings do describe O-ring 2, which is a compliant member between the thermal modules. The specification also recites that the system "has a dog leg feature that keeps adjacent blocks connected and applies pressure on the o-ring number 2." (Specification paragraph [0011]). The dogleg feature is also shown in Figures 1 and 2. Figure 1 is reproduced below with added annotation, showing the locations of two dogleg features.

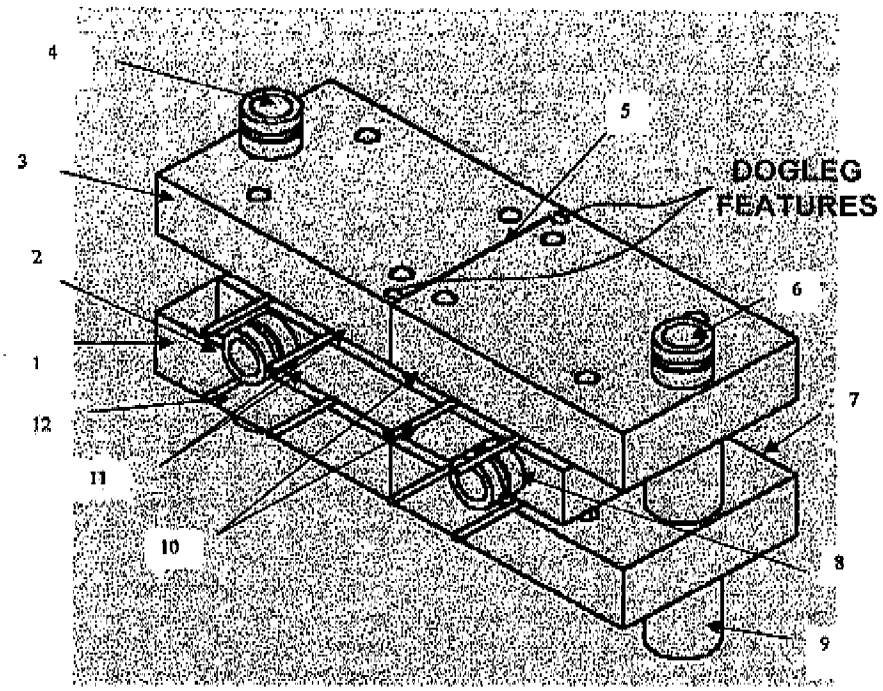

Figure 1.

Claim Rejections Under 35 U.S.C. §102

Claims 8-15, 24-25, 27-28, 30-35 and 38 have been rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by U.S. Patent No. 3,607,444 issued to DeBucs ("DeBucs").

Applicant respectfully traverses, because DeBucs does not disclose, expressly or inherently, each and every limitation of Applicant's claims.

Claim 8 recites in part that

> ***the first thermal module comprises a first block*** *including a first passage through which first passage the first fluid flows through the block; and ...*
> ***each of the plurality of second thermal modules comprises a respective second block*** *including a respective second passage through which second passage the second fluid flows through the respective second block....*

Thus, the first and second thermal modules of claim 1 are blocks. DeBucs does not disclose at least this aspect of claim 8, and therefore does not anticipate claim 8.

In support of the rejection, the Office Action cites element 17 of DeBucs as disclosing the claimed *first thermal module*, and elements 16 of DeBucs as disclosing the *second thermal modules*. (Office Action p. 7). However, while DeBucs describes its elements 17 as "thick plates or blocks" (DeBucs col. 4 lines 53-54), elements 16 are not blocks, but are "tubes" made for example of "spring steel", and are "elastically deformable in the axial direction of the thermocouple element legs...." (DeBucs col. 4 lines 62-73).

In response to Applicant's previous arguments, the Office Action offers that one dictionary definition of "block" is "a solid piece of something", and that therefore DeBucs' tubes are "blocks" because they are made of solid metal. (Office Action p. 7).

During examination, the words of the claim must be given their plain meaning unless the plain meaning is inconsistent with the specification. (MPEP 2111.01). "The ordinary and customary meaning of a term may be evidenced by a variety of sources, including 'the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art.'" MPEP 2111.01, quoting *Phillips v. AWH Corp.*, 75 USPQ2d 1321, 1327 (Fed. Cir. 2005).

The "Patent and Trademark Office ("PTO") determines the scope of claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction 'in light of the specification as it would be interpreted by one of ordinary skill in the art.'" *Phillips v. AWH Corp.*, 75 USPQ2d 1321, 1329 (Fed. Cir. 2005), internal citations omitted. MPEP § 2111.01 makes clear that when an examiner gives claims their broadest reasonable interpretation, the "claims are not to be read in a vacuum, and limitations therein are to be interpreted in light of the specification...."

Applicant respectfully submits that the ordinary meaning of "block", as enlightened by the specification and extrinsic evidence, does not include a compressible tube, and to assert that it does is objectively unreasonable. The specification shows the example thermal modules to be generally rectangular blocks with passages formed in them. A more applicable dictionary definition of "block" is "a compact usually solid piece of substantial material especially when worked or altered to serve a particular purpose". (Merriam Webster Online dictionary). DeBucs itself does not describe its tubes 16 as blocks, although it describes other parts as blocks.

DeBucs does not describe a system in which each of the first and second thermal modules is a *block*, and thus does not anticipate any of Applicant's claims.

It also would not be obvious to modify the system of DeBucs to use blocks in the claimed manner, because such a modification would change the fundamental principle of operation of DeBucs' system.

Rejections under 35 U.S.C. §103

Claim 26 has been rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over DeBucs as applied to claim 8 above. Claim 26 depends from claim 8 and adds further limitations. The Office Action relies on DeBucs to teach or suggest all of the limitations of claim 8. As is explained above, DeBucs fails to do so, and thus cannot support the rejection of claim 26 under 35 U.S.C. § 103(a).

Claims 16 and 36-37 have been rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over DeBucs as applied to claim 8 or 32 above, in view of U.S. Patent No. 4,564,504 to Sorber ("Sorber").

Claim 29 has been rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over DeBucs as applied to claim 28 above, and further in view of U.S. Patent 4,228,923 to Hed ("Hed").

Each of claims 16, 29, 36, and 37 depends indirectly from claim 8 and adds further limitations. The Office Action relies on DeBucs to teach or suggest all of the limitations of claim 8. As is explained above, DeBucs fails to do so. The additions of Sorber and Hed do not cure the deficiencies of DeBucs, and claims 16, 29, 36, and 37 are believed allowable for at least this reason.

CONCLUSION

In view of the foregoing, Applicant believes all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 303-571-4000.

Respectfully submitted,

DRAFT

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Attachments
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62935953 v1